TAKING THE MYSTERY OUT OF HAM TV!

Thanks for your inquiry about ham TV/ham radio. Because of the sizeable response I have taken this more general response to cover all the topics raised in your letters. Ham Radio is easy! The mode of television transmission is exactly the same as regular broadcast TV. In fact, you could say we invented LPTV (low power TV) and interactive TV (two way TV). Just as you watch the local cable or broadcast TV (ABC< NBC< HBO, etc) you can watch friends and total strangers (!) on ham TV as we converse back and forth. Its very much like using a telephone with the addition of live pictures. Broadcast quality pictures! There is no charge, fee or toll to use ham radio or ham TV. It is part of having a ham radio license, which is easier to get today than ever before.

NO MORSE CODE REQUIRED!

The FCC rules have changed. You can get a ham radio license with no morse code test. If you want to upgrade later to higher class license, code is required. To get on the airwaves on the VHF, UHF and microwave frequencies the no-code technician license is all you need. This allows you to send voice on any frequency above 50 MHz, which covers the popular 2 meter (144-148 MHz) band, which is where most of the two-way TV conversations are. (See the frequency listing page in the enclosed handout for the frequency in your area). Most of the country talks on 144.34 MHz using FM voice. The radio equipment for this band is inexpensive and can be anything from a used radio, handi-talkie, to a full blown multimode (AM, FM, CW, Sideband) radio. These are easy to operate and physically resemble other common two way radios used in police, fire, business, CB and marine usage.

Video , with or without sound is sent in the 420-450 MHz band, just below channel 14 on the UHF dial of a TV set. It is also the same as CABLE TV channels 57-60. All you need is your TV set, your video source (camera, camcorder, computer, etc) an antenna, cable and transmitter/converter. Some sets with electronic slide rule tuning (continuous tuning, not channel by channel) will receive this frequency band with no modifications. Radio Shack LCD color TV's are typical of these.

IT AIN'T AS TECHNICAL AS YOU MAY THINK!

Years ago (I've been at this for 25 years) we had to build our own equipment and range was very limited by the technology of tubes and early transistors. Today, 40-60 miles is typical distance for a simple antenna and a 50 watt transmitter. One watt (about 1/7th of a flashlight bulb) from a helium balloon can send a picture over 500 miles. Its a matter of line-of-sight. A typical ham TV station can send about as far as your home town commercial TV station. This is because we use a directional antenna (called a Yagi) and a sensitive receiver, typically 10 to 100 times more sensitive than your regular TV set. The transmitter and receive converter are in one box with simple controls and is not expensive. There are several manufacturers who advertise in the enclosed magazines from which you can choose equipment. Most of the transmitters are 1 watt, which is good for abut 10-15 miles with a good antenna. An amplifier to the 50-100 watt level will get your signal out as far as normal conditions will allow...up to 100 miles depending on terrain.

DON'T GET SHOOK UP BY JARGON!

Any hobby tends to have a jargon which develops. There are also various levels of expertise. Your knowledge of video is a good start and may be better than the average ham if you are a "video technocrat" or vidiot! The lingo of the hobby is quickly learned through normal conversation.

IT AIN'T ROCKET SCIENCE

it says, "it ain't rocket science!"

Your video source (camera etc) plugs into the transmitter. The transmitter connects via a coax cable to an antenna, as high as you can safely get it. The transmitter has a receive converter which translates the ham frequencies to TV channel 3 or 4 on your regular TV set. You choose which ever is better for you (3 or 4). The TV set is set on channel (3) and "receives" the ham signal from the converter which is tuned to the 450 megahertz (MHz) band. There is a switch on the transmitter to select transmit or receive. You receive picture and sound on the TV set as you would any other TV station. You send picture and sound from your camera, VCR, computer or whatever source you are using. Hams use the 2 meter (144.34 MHz) signals to talk back and forth, like a telephone, to get the conversation started (call CQ) which also allows more than two people to be in the conversation.

A TV repeater, which can be found in many areas, receives a ham TV signal, boosts the power and re-transmits the signal. In this way, many stations can see each other and be in a round-table discussion of show and tell together. Otherwise, the directional antenna must be pointed at each station you wish to communicate with unless you are lucky enough to have everyone in a row!

Under enhanced atmospheric conditions, the range of your ham TV station can extend hundreds of miles, even thousands. This usually happens on cool calm nights, spring and fall "inversions" (the condition that makes the famous LA smog) but can happen at any time.

what can I send and receive?

How big is your imagination? As long as you do not play music or run commercials, you can send everything else you can imagine to any other ham station. Non hams can have receivers with video adaptors as made by Icom, Kenwood, Yaesu, or just purchase a receive converter (called a donw-converter). You can cover any topic. Go outside your home studio and transmit while traveling (mobile operation) while on a building, hill or mountain top (portable operation) even communicate to the Space Shuttle astronauts on certain flights! Even model radio control vehicles (planes, rockets, boats, kites, etc) can carry a ham TV transmitter. This R/C video lets you see from the pilots seat while safely on the ground!

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(Its greek to me!)

To get to the next step, we have a recommendation. First, contact the ARRL, NARA, W5YI to find a local ham club which offers a ham class and exam. (known as VE, volunteer examiner) One book, by the ARRL "Now you're Talking" is available at most Radio Shack stores. You may also find it at a local electronic parts house or any of the 50 ham radio stores in the country. There are even VHS video cassette courses available from CQ Magazine and QST (ARRL) Magazine. There are also private schools and public classes in ham radio. Contact any local community college. There is only a simple multiple choice 55 question exam, which is given by ham radio operators in your area. (If you are ambitious, drive around and look for a large antenna to find a ham!)

Now that your ham radio license is a done deal, you can get to know about ham TV through our beginners book, "ATV Secrets Volume I" which is a non-technical guide to getting started. It has all the basic information needed to get on-the-air, and begin telecasting. Our magazine contains both operational and technical articles. The January 1994 issue is enclosed because it has a cumulative index from which you can choose topics of interest.

We also have several technical books for those who want to understand video, a three hundred page book called TV Secrets Vol II, and two British books. We cover the gamut from neophyte to expert. The color catalog is in the issue centerfold. (Yeah, we couldn't resist doing a color centerfold!) Enclosed are several items which will help you get started. Welcome to the fun world of ham TV.

Best regards (73) Henry Ruh KB9FO

SOURCES:

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